

arcuate on the lower whorls. There are 43 riblets on the penult whorl. In the conical part of the spire the riblets are partly hollow, and broken down in places. The whorls are quite convex, and in the lower part of the conical portion they overhang a little. The last whorl is well rounded below, and carries the aperture forward shortly in advance of the ventral outline of the shell. Aperture is small, almost circular, a little oblique, with a quite flat, reflected and continuous lip. The internal axis is simple.

Length 19.5, greatest diam. 5.3 mm.; $14\frac{3}{4}$ whorls remain, the embryonic whorls being broken off. Aperture 4 mm. long, measured outside peristome.

Rio Conchos, Chihuahua, Mexico, not far above its confluence with the Rio Grande, collected by Mr. B. H. King, 1912.

This species is larger than any similarly sculptured *Haplocion*. An entire specimen would have about 17 whorls, with a length of slightly over 20 mm. The holotype is in coll. Bryant Walker, no. 36935.

With the preceding there were two specimens figured in pl. 4, fig. 5, which appear referable to *H. pasonis* Dall. The riblets in the last whorl are slightly closer than in a specimen of the original lot of *pasonis*, but I can find no material difference. They measure :

Length 21.6, diameter in the middle 6.6 mm.; $11\frac{1}{2}$ whorls.

Length 21.4, diameter in the middle 6.1 mm.; $11\frac{2}{3}$ whorls.

NOTES ON THE BIFASCIATA GROUP OF OXYCHONA.

BY H. A. PILSBRY.

The genus *Oxychona* contains conic, acutely carinate, thin and light-colored snails of eastern Brazil, evidently arboreal, distributed from the Province of Rio to that of Bahia. Although very similar in shape to the Helicid genus *Papuina*, I was led to place the group in the *Bulimulidæ*, near *Drymæus* and *Zaplagius*, by the characters of the teeth and embryonic shell.

Dr. von Ihering, who considered the group in a valuable paper¹ has confirmed this classification.

Having occasion lately to go over the specimens in the Academy collection, it became evident that the synonymy of *O. bifasciata*, the most widely known of them, had been made too comprehensive by Pfeiffer, who has been followed by subsequent authors. Certainly two, probably three species seem to have been lumped; though closely related they appear to be distinct. References to the literature may be found in Manual of Conchology V, p. 128; XI, p. 181; XIV, p. xxxvii, 154.

Partial Key to species of Oxychona.

- a* Last whorl descending deeply below the keel in front; shell pitted above the keel and suture; aperture with a rather long "spout," the lip but slightly expanded above it, white; alt. 15, diam. 22 mm., between Rio and Campos, State of Rio de Janeiro. *O. lonchostoma* (Mke.).
- a'* Last whorl not descending in front.
 - b*. Shell higher than wide. *O. gyrina*.
 - b'*. Shell wider than high.
 - c*. Lip above the angle well expanded and calloused within; outlines of spire nearly straight; peristome white or pale pink. *O. bifasciata* (Burr).
 - c'*. Lip scarcely or not expanded above the angle, sinuous.
 - d*. Peristome white or pale pink, basal margin rather wide; "spout" moderately developed. *O. bosciana* (Fér.).
 - d'*. Peristome rose-colored throughout, basal margin narrow. Spout longer. *O. pyramidella* (Wagn.).

I have not seen *lonchostoma*, *gyrina* or typical *pyramidella*, all of them described nearly a century ago, and not recorded by any subsequent collector. *O. mimarum* is not sufficiently known to contrast with the figured species. Notes on the other species and their subspecies follow.

¹Analyse der Süd-Amerikanischen Heliceen. Journ. Acad. Nat. Sci., Phila., XV, 1912.

OXYCHONA BIFASCIATA (Burrow, 1815). Pl. IV, figs. 4, 8.

This is described by Burrow as "white with two purplish brown transverse bands and a dark brown apex. Inhabits Pernambuco." The figure, shows the outer lip to be expanded and thickened within ; it measures, length 18, diam. 18 mm.

Specimens in collection of the Academy are variously banded (pl. IV, figs. 4, 8), and have two very small dark spots behind the upper lip in two specimens, none in two others. *The upper lip is well expanded, calloused within*, the callous thicker near the periphery, giving the inner edge a sinuous contour. The basal lip is wider than in *blanchetiana*, and the last whorl is barely concave above the keel, not pinched out as in *blanchetiana*. The outlines of the spire are almost straight. In one of the four examples the tip of the apex is dark. In one of the specimens the lip has the faintest roseate tint, which becomes distinct at the columellar insertion. The others have a white lip ; and this was no doubt the typical color, as a colored lip would have been mentioned by Burrow.

Length 15, diam. 16.4 mm. ; $6\frac{1}{2}$ whorls.

Length 15.4, diam. 17 mm. ; $6\frac{1}{2}$ whorls.

OXYCHONA BOSCIANA (Férussac).

Férussac's figured type shows dark bands a short distance below and above the periphery, another below the suture ; the upper two bands spreading into blotches behind the lip ; spire slightly concave, and the latter part of the last whorl strongly so near the periphery, causing the aperture to be conspicuously produced, spout-like. The upper lip is sinuous, and *not at all expanded*. Length about $16\frac{1}{2}$, diam. about 21 mm. Lip white.

Helix bosciiana was mentioned in the *Prodrome*, but first defined by three figures in the *Histoire naturelle*, pl. 64, fig. 1. This is one of the old plates, drawn by Bessa and engraved by Coutant. I do not know the date of issue, but it was probably not long after 1820.

OXYCHONA BOSCIANA BLANCHETIANA (Moricand, 1833). Pl. IV, figs. 2, 3.

Mem. Soc. de Phys. et d' Hist. Nat. de Genève, vi, p. 539, pl. 1, f. 3.

This is the best known form. Typically it is white above, with two dark blotches behind the lip, but as often there is also a narrow dark band a short distance below the suture, and sometimes an interrupted one above the carina. The base has a band, often split, near the periphery. Upper lip *not expanded*. Lower lip reflected, white or faintly pinkish. Outlines of spire concave. Length 17.4, diam. 19.5, or somewhat smaller.

This form was collected by Blanchet in the environs of Bahia. It appears to differ from typical *bosciana* only in color, and its status as a subspecies is very dubious. It is probably a mere color-form of *bosciana*.

Hidalgo has figured another variety of *bosciana*, collected by the Spanish Expedition around Rio Janeiro, which seems rather out of the range of the species (Viaje al Pacifico, Moluscos, pl. 1). It is evident that the species has various local color-races, about which we know very little at present.

OXYCHONA PYRAMIDELLA (Wagner, 1827).

This is a form having the general shape of *bosciana*, with two bands above, one below the periphery of the last whorl. The aperture seems to be produced outward in a narrower spout than in *bosciana*, upper lip apparently not expanding, and the whole lip rose-colored. The habitat given is the province of Bahia, "in sylvis mediterraneis inter montem sanctum et flumen S. Francisci." The figures are rather poor, and series of specimens are needed to determine whether it is to be ranked as a subspecies of *bosciana* or as a distinct species.

OXYCHONA PYRAMIDELLA CURRANI Bartsch. Pl. IV, fig. 1.

See NAUTILUS for September, 1916, p. 53. Rio Grungugy, Province of Bahia. Figures of the type of this handsome race are now given. It differs conspicuously from *blanchetiana* by the more pinched keel, the longer external spout of the aperture, more sinuous, broadly rose-bordered lip, and other features fully described by Dr. Bartsch. The microscopic sculpture is the same. It appears to be more elevated than *O. pyramidella*, with somewhat diverse color-pattern.

OXYCHONA MIMARUM Ancey.

Oxychona bifasciata var. *mimarum* Anc., Le Nat., 1901, p. 93. Pilsbry, Man. Conch. XIV, p. 154. This unfigured form from Minas Geraes is probably specifically distinct. Not seen by the writer.

A LIST OF MOLLUSKS COLLECTED AT CASTLE ISLAND, BOSTON.

BY SHIELDS WARREN.

Castle Island, Boston Harbor, is an interesting collecting ground owing to the number of mollusks that flourish there under the adverse conditions necessarily present in a great seaport. The main channel to the inner harbor passes the island, and every ebb-tide strands much of the water-front debris on its shores. Although the island would seem an unfavorable habitat for even hardy mollusks, it is one of the best collecting places for nudibranchs in the vicinity of Boston. In the early spring considerable numbers come there to breed, particularly *Acanthodoris pilosa* and *Lamellidoris bilamellata*, and I have found scattered specimens of these and other species from October to June.

The shore of the island on the east and south is sand and gravel with scattered boulders, and is sand and mud, with patches of eel-grass, elsewhere. Between Castle Island and City Point are extensive mussel flats; and clay, dredged from the neighboring channel and dumped beside the bridge, contains numerous valves of oysters and quahaugs similar to those found in the excavations for the Boylston Street Subway. *Litorina littorea* is very plentiful on the rocks and is gathered by the Italians for food. The imbricated form of *Thais lapillus* is fairly abundant.

Below is a list of the mollusks I have collected on the island, and which seems to be fairly representative of the whole of Boston harbor. Species marked with an asterisk have not been obtained living.